Gymnastics in Relation to Health.

See page 180.

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HEALTH

A WEEKLY JOURNAL OF

DOMESTIC AND SANITARY SCIENCE.

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Lie in three words, HEALTH, PEACE, and COMPETENCE."—*Pope.*

EDITED BY DR. ANDREW WILSON, F.R.S.E. &C.

VOL. XIII.—No. 324. FRIDAY, JUNE 21, 1889. [PRICE TWOPENCE.

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(Signed) GEORGE HENTY, M.D.

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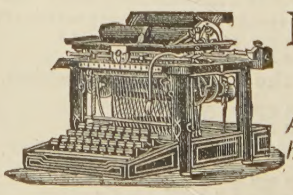

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HEALTH

EDITED BY

DR. ANDREW WILSON, F.R.S.E., &c.

LONDON: *FRIDAY, JUNE* 21, 1889.

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Notes by the Way

BY THE EDITOR.

"Health is the foundation of all our physical happiness."—*Herder.*

"WHAT next?" may well be one's inquiry on reading the following account of new forms of narcotism given in a medical journal. My contemporary remarks that amongst the existing plagues of civilization must now be added some new forms of intoxication, showing how readily the latest additions to the means of relieving human suffering are seized upon as means of self-indulgence, however dangerous. Cocainism is already a recognized form of self-intoxication, leading to special kinds of hallucinations and insanity. MM. Magnan and Saury report three cases of hallucination due to the cocain habit. One patient was always scraping his tongue, and thought he was extracting from it little black worms; another made his skin raw in the endeavour to draw out cholera microbes; and a third, a physician, is perpetually looking for cocain crystals under his skin.

✣ ✣ ✣

Two patients suffered from epileptic attacks, and a third from cramps. It is important to notice that two of these patients were persons who had resorted to cocain in the hope of being able to cure themselves thereby of the morphine habit, an expectation which had been disappointed. For more than a year they had daily injected from one to two grammes of cocain under the skin, without, however, giving up the morphine injections, which were only reduced in quantity. The possibility of substituting cocainism in the endeavour to cure morphinomania is a danger, therefore, which must be carefully held in view. The conclusion of those who urge that the only hope for a victim of narcotism or alcoholism is the utter and complete termination of the habit, seems to me to be fully supported by the observations I have quoted. To endeavour to cure one form of narcotism by giving another narcotic, would appear to be the height of medical folly.

✣ ✣ ✣

IN Germany police supervision appears to be somewhat autocratic, judging from a report that the President of the Berlin Police has issued certain regulations for hospitals. Dr. Cornet has proved that the spread of consumption is largely due to the circumstance that the sputum of consumptive patients, which always contains germs, floats about in the air after being dried and pulverized, and is inhaled by healthy people. The President of Police has, therefore, ordered that consumptive patients in hospitals shall be kept in special wards, and forbidden to expectorate on the floor or into their handkerchiefs, but only into vessels partly filled with water; that the sputa shall be removed in a wet condition; and that their clothes and linen shall be thoroughly boiled and disinfected. These regulations are to be enforced not only in hospitals, but also wherever consumptive patients live. In England I think we more wisely trust to the education of the people in hygiene, in order to accomplish sanitary reforms.

✣ ✣ ✣

PROFESSOR STILLING, of Strasburg, declares short-sightedness to be due to a peculiarity in the structure of the skull, and laid it down as a natural law that lowness of orbit is the condition of short sight. He found that the short-sighted pupils in several schools in Strasburg had much lower orbits than the rest. This theory was eagerly turned to account by some pedagogues, who were delighted to find an expert who declared that short sight is not due to abuse of the eyes in schools. To prevent the injury to the great cause of school hygiene likely to arise from Stilling's theory, a distinguished champion of that cause, the well-known Breslau oculist, Professor Hermann Cohn, says of Stilling's views that they have not stood the test of recent investigations made by Professor Schmidt-Rimpler of Marburg on 1,299 orbits. He maintains further that a law of nature cannot be proved by 1,000 cases, but perhaps only by 10,000; and adds

CANCEROUS DISEASES.

TESTIMONIALS.

The following is from Dr. John Sheerer, St. Albans, Sept. 5th, 1888.

MR. JOHN M. YOUNG, *Manager Missisquoi Mineral Springs.*

DEAR SIR,—My mother, Mrs. Susan Sheerer, of Virgil, Cortland County, N.Y., was pronounced by Dr. Brunson, of said town, to have had a cancer in her breast in 1866. She used two cases of Missisquoi Water, and was cured. She is now eighty-two years old, and in splendid health. Yours truly,

JOHN SHEERER.

MISSISQUOI SPRINGS.

[An Extract from "The Monthly Homœopathic Review," May 1st, 1870.]

By Dr. TUTHILL MASSY.

The Missisquoi Springs of Franklin, County Vermont, are at present rather frequently prescribed in England for diseases where the knife was the severe medicine of other days: I therefore deem it my duty to lay before your readers the experience which I have gathered relative to these Springs.

* * * * * * * *

The Spring A, Missisquoi Springs, is the one most generally exported, and which I have frequently prescribed. It gave great comfort to a lady who was suffered from a large open cancer in the right breast; cleansed the surface, relieved the pain, induced sleep, and diminished the tendency to bleeding, when applied externally, like simple water dressing, and taken in half-tumbler doses twice a day.

The benefits of the Spring A were very remarkable in a lady burdened with an ovarian tumour containing much water, with considerable abdominal tenderness. A few bottles always reduced her great size, and relieved her mind from the dread of an operation which was once proposed.

PAMPHLET on application to the Sole Importers—

INGRAM & ROYLE, 52, FARRINGDON-STREET, LONDON, E.C.

AND OF ALL CHEMISTS.

that most short-sighted people are not born so, but become so at school. "Let us not be led astray," he concludes, "by brilliant theories, in our energetic battle against the spread of short sight, and let us strive, by more and more zealous introduction of the most rational school hygiene, to prevent the increase of this evil, which even in a slight degree is a defect, but in a higher degree a real disease." Professor Föster, head physician of the Royal Eye Hospital in Breslau, maintains, again, that short sight in children is not infrequently due to their wearing too tight collars.

✿ ✿ ✿

A FRENCH contemporary gives a vivid description of the vitality of the bacillus or germ of tubercle. Of all germs it is one of the most refractory to the action of the most destructive agencies. It maintains its virulence after lying for 40 days in putrid sputum, and for 186 days away from contact with air. It can live at temperatures between 86 degs. and 104 degs. F. The most unfavourable conditions, though affecting its activity, do not compromise its existence, for it resumes its virulence whenever its surroundings become suitable. To render it inactive it is necessary to have recourse to violent means, such as ebullition, steaming, or prolonged contact with antiseptic substances, such as ammonia, concentrated salicylic acid, absolute alcohol, or a strong solution of carbolic acid. Corrosive sublimate itself is said to be powerless to disinfect the sputum. The bacillus acclimates itself amid the most unfavourable surroundings. It complies with the exigencies of its condition, and even alters its shape, but without losing any of its virulence, of which it gives ample evidence whenever fortune favours it. Its polymorphism is not the least curious point in the life-history of this organism. Thus, it is sometimes a short rod, sometimes a line—occasionally it splits and forms spores—but it always returns to the bacillus in its complete form, with its virulence intact, whenever circumstances become favourable.

✿ ✿ ✿

SOMETIMES even a very slight knowledge of natural history, says a writer, is of great practical use. As an illustration, we give the following, related by a naturalist: A gentleman, making a call at the house of a friend, was astonished to find the rooms and passages in confusion; and, on inquiring the cause, was answered, "Oh, we are very much annoyed here; a rat has come to finish his existence under the floor of our large drawing-room. We do not know the exact place; but we cannot endure the stench any longer, so we have removed the furniture, rolled up the carpets, and called in the carpenters, who are just beginning to take up the floor."

✿ ✿ ✿

"Now, don't be too hasty," said the visitor; "you need not pull up more than one board. I will show you what I mean presently: and, meanwhile, shut down the drawing-room windows, and close the door." He then stepped down into the garden, walked around to the horse stables, and after a few minutes' absence came back to the drawing-room with both hands tightly clasped. Placing himself in the centre of the drawing-room, he opened his hands, and out flew two large blue-bottle flies, and buzzed around the room for a second or two. But presently one of them alighted on a certain plank of the floor, and was almost immediately followed by the other. "Now, then," said the visitor, "take up that board, and I'll engage that the dead rat will be found beneath it." The carpenters applied their tools, raised the board, and at once found the cause of the unpleasant smell.

Original Essays

"Life is not to live, but to be well."—*Martial.*

HOW, WHY, AND WHAT WE BREATHE.

BY J. SCOTT, B.Sc.

THE idea that the breath is identical with life is a very ancient notion; but it is one entirely supported by all the facts of existence. Breathing, or respiration as it is also named, is the first function of the body we exercise when we are born, and its cessation is coincident only with the disappearance of the flame of life itself. Breathing is thus a very familiar fact of life; but at the same time it is one regarding which a very great deal of misconception exists. It is not an easy matter for a person unacquainted with physiology to say why he breathes; and it is, perhaps, more difficult still for such an one to answer questions regarding how he breathes or what he breathes. Perhaps to elucidate this matter as thoroughly as possible, we may find it advantageous to consider, first of all, the nature of the air we respire.

Ordinary air is a mixture of two gases, with certain other ingredients added thereto. If we could breathe absolutely pure air we should inhale a mixture of oxygen gas and nitrogen gas. Roughly speaking, in 100 parts of air there are 79 parts of nitrogen to 21 parts of oxygen. The latter gas is essential for the continuance of animal life. Without oxygen, animal life comes to an end. The nitrogen of the air is an inert gas, on the other hand. It appears to act simply as a diluent for the oxygen, and to pass in and out of the lungs unchanged in nature and almost unaltered in volume. In addition to these essential gases of the air, we find a number of unnecessary or extrinsic substances included in the composition of the atmosphere. Thus, in ordinary air, carbonic acid gas exists to the extent of 4 parts in 10,000 (of air); but when this quantity becomes increased, even slightly, symptoms of difficulty in breathing occur. A certain amount of watery vapour exists in the atmosphere. Traces of ammonia, of nitrous and nitric acids, and of organic matter—this last derived from animal and plant bodies—are also found in ordinary air; but in impure air the "traces" increase to very definite amounts. Ozone is the last constituent of air which may be noticed. This gas consists of oxygen in a highly concentrated form. It is found only in the purest of air, and we breathe it when we visit the sea-coast or the hill-sides. It exerts tonic and invigorating properties on the human body, and is therefore a very desirable but infrequent element in our atmosphere. Such being the composition of the air we breathe, we may say that it is the oxygen for which there exists the real demand on the part of animals. The nitrogen dilutes the oxygen, and all the other substances in air are to be regarded as accidental in nature. The less we breathe of them—excepting the ozone—the better for our physical health and well-being.

The necessity for breathing is, in one sense, similar to that which exists for the taking of food. In a very true sense, air is food. The oxygen is demanded as part and parcel of the body's nutriment; it is necessary for the many chemical changes which occur in our frames, and it may be regarded as an essential condition for the continuance of all animal life, and, indeed, of all plant life as well. Breathing, however, is something more than the mere inhalation of air. That air passes into the blood of the animal, and, as we have seen, becomes

utilized in the body's work and maintenance; and we know further that it is the red corpuscles of the blood which carry the oxygen to the tissues. But the other side of breathing—that of "breathing out"—is as important as is the phase of taking in oxygen. The breath we give out or expire from our lungs is of very different composition to that we inspire. The latter we have seen to be composed of nitrogen and oxygen, with certain other constituents; but that which is given forth from the lungs is loaded with the waste matters of the frame.

For the blood which is returned to the heart and lungs in the veins contains a large part of the body's refuse. This waste material is the result of the body's work, and is represented by carbonic acid gas, by water, by heat, ammonia, organic matter, urea (or nitrogenous waste), and minerals. To the lungs—and also to skin and kidneys—we find these substances brought by the blood, and by the act of breathing they are not only removed from the blood, but fresh air with its oxygen is also added thereto. Breathing is thus a double process, and its nature corresponds closely with the double phase of its work—that is, with inspiration and expiration. By the one action we take into the body the needful oxygen, whilst by the other we give forth the waste matters which are the necessary results of bodily work, but which, if left unexcreted from our frames, would cause pain, illness, and, in time, death itself.

It is an easy matter to figure to ourselves the essential nature of any breathing organ. Its structure is at the best a simple one. On the one side of a thin moist membrane, let us suppose we have a network of blood-vessels, while the other side of the membrane is in free communication with the external air; in such a simple contrivance we find all the essential conditions of a lung and of a gill. All that is needed for the performance of breathing is a membrane through which, into the blood, there will easily pass the air needed for the body's wants; while similarly through this membrane the waste products will pass outwards.

The gill and the lung, then, really conform to this simple state of matters, and, in its most elementary form, a breathing-organ is little else than a mere membrane of the kind just described. In the gill it is only the arrangement of the blood-vessels which has become a little more complex, while in the case of the lung, we find a more elaborate system of air-tubes, through which, into the organ, the animal draws the atmospheric air. These air-tubes lead into the *air-cells* of the lung. The cells are very small cavities arranged in clusters, and it is on the walls of these cells that we find the dense network of blood-vessels, of which mention has already been made. So that in every form of breathing organ—and in the skin which is analogous to a breathing organ as well—an arrangement exists whereby, through a moist membrane, with blood on the one side of it and air on the other, an exchange of air and waste matters is perpetually taking place. It is such an exchange which is the one essential feature of breathing in animals and plants.

The breathing of aquatic animals does not differ from that of land animals, inasmuch as the same conditions hold good for both classes. A fish does not "breathe water," as is popularly supposed, but breathes the air which has become mechanically mixed with the water. Animals possessing lungs, but living in water, such as the whales and seals, require to ascend to the surface for the purpose of breathing, as is well known; but their lungs are generally of large capacity, and in virtue of this fact they are enabled to dive deeply and to remain submerged for very long periods of time.

In man and his neighbour animals the process of breathing takes place chiefly through the special movements of the *thorax*, or chest cavity, in which the lungs are contained. The chest is composed of the spine behind, the ribs at the sides, and the rib cartilages (or gristly ends of the ribs), and breastbone in front. The chest is furthermore completely shut off from the abdomen below by a great, broad muscle, the *diaphragm*, or "midriff." This muscle, therefore, forms at once the floor of the chest and the roof of the abdomen. It is the great agent in taking in a breath. For when inspiration is performed the midriff-muscle descends, and in so doing tends to enlarge the chest from side to side, and also from above downwards. At the same time the little muscles between the ribs separate these bones one from another, and thus enlarge in a further measure the chest capacity. The elastic lungs follow the chest movements and take advantage of the increased space. They expand and thus receive their fuller complement of air. When breathing in has come to an end, expiration or breathing out regularly succeeds. This last is a purely mechanical process when we compare it with inspiration. In other words, it costs us some share of muscular trouble to breathe in; while it costs us no such trouble to breathe out. The elastic recoil of the chest and the return of the ribs to a position of rest explain sufficiently why expiration is so readily accomplished. If we study the difference between the two actions in our own bodies, we may readily note how mechanical is the act of breathing out as compared with that of breathing in.

It is in this way, however, that a certain interesting phase of natural economy is exhibited. In place of our having to exert ourselves, in a muscular sense, to breathe in and to breathe out, both, we have really to trouble ourselves about one act only, that of inspiration. The other demands no exercise of will or of muscular power; and in this fashion our strength is husbanded and our energies conserved.

Although breathing is largely an automatic action—that is to say, one performed in a machine-like and unconscious fashion—yet it is clear it is by no means so completely outside our control as is the action of the heart, for instance. Breathing goes on regularly and automatically, under ordinary circumstances, but we are able to check it, for a time at least, at will, and it is markedly affected, as every one knowns, by the emotions. The quick, short gasps of a frightened person, or the agitated breathing of one labouring under anger or joy, are familiar examples of the fact that we do possess a power of arresting and checking what is ordinarily a purely automatic act of our lives.

Finally, the muscles of breathing can be shown to perform a very fair amount of daily work. It has been calculated that in twenty-four hours a man's breathing muscles will perform an amount of work equal to that of lifting twenty-one tons weight one foot high. This is what is meant by saying that breathing implies in twenty-four hours, twenty-one foot tons of work. So that we see even this very necessary work of life is not carried on without a very considerable expenditure of that vital force which it is the very aim of breathing to assist in maintaining.

The temperature of water for horses is not so much of an object as the purity of it. While it is best to have the water cool, it is more important to have it free from all impurities.

GYMNASTICS IN RELATION TO HEALTH.

BY ELLEN F. WHITE.

"Gymnastik Director" of the Royal Gymnastic Institute of Stockholm.

SECOND PAPER.

IT is seldom found necessary to give any systematic course of physical training to children before they go to school. They play about, and are rarely still for many minutes together. But if, from deformity or any other cause, gymnastics become necessary, medical and not education gymnastics should be resorted to. But there is no limit of age for medical gymnastics; as soon as illness sets in they may be employed, and I have seen a little girl of five under treatment for double curvature of the spine.

Eight years is usually considered the best age for a child to join in the regular course of school gymnastics. Before this age, they require too much individual teaching to make it advisable to allow them to take part in class-work, especially if the class be large and the teacher have no assistant. Every child should be thoroughly examined by the doctor before being allowed to take part in class-work, and the teacher should be told if a child have any special weakness, so that he may be watched and guarded from doing himself harm. It is by no means necessary or advisable, in ordinary cases, to forbid gymnastics altogether merely on account of some local or general weakness.

There are three courses open: one is to put such children under treatment by medical gymnastics suited to each case; but this, for many reasons, is often impracticable, especially in country places where the teachers themselves may not have the necessary theoretical knowledge. Another plan is to separate out the delicate children into one class, and let them take exercises together suited to their strength. The third plan is to note those children in each class who have any special weakness, and to forbid them to take any exercise which might be injurious. Thus, if a child suffered from weakness of the heart, he would not be allowed to take any hanging movements, running, or jumping. In case of rupture, certain exercises would be forbidden, whilst in either case the child would derive much benefit from taking part in the rest of the drill.

The most perfect form of educational gymnastics is that provided for young men of twenty to thirty years of age. On this model all other school and health gymnastics are founded. There are certain root forms of exercises, modified and developed to suit different ages and degrees of health, which can reach their full power only in the well-grown and well-trained man.

But what is the object of school gymnastics? and why are they so necessary for health? When sitting for hours at a desk, pouring over lessons or writing, the system becomes stagnant, clogged, as it were, with refuse matter, which for want of movement is not carried away, but remains to obstruct the passages and to vitiate the fresh supplies brought to the blood. As soon as movement takes place, the flow of the blood is quickened, and the waste products of the body are taken up and carried away to the various excretory and secretory organs, lungs, skin, liver, &c., where they are either cast out of the system, or go to form some new product necessary for the economy of the body—as, for instance, the bile. Movement in any part of the body tends to quicken the circulation even in distant parts; but in order to have equal effect on all parts, the movement must be applied throughout the whole body. It is through the blood that every part receives its nourishment; and it is to the blood that every part gives up its waste products and unused material. This may be likened to a carrier collecting empty bottles and boxes, delivering full ones; and then going round to the various offices for a fresh supply of material. Thus it will be seen that the circulation and everything connected with it are of the utmost importance. If the carrier neglect his work, if he take away the rubbish leaving no fresh food, or if he bring the food and leave the rubbish behind, the consequences will be equally disastrous. If one thinks of an unemptied dustbin, one will be inclined to acknowledge this; especially if the said dustbin be under the larder window, through which milk and other foods are equally contaminated. The object, then, of a systematic course of gymnastics is to act on the circulation and everything connected with it, so as to keep it in full working order. But this object includes the whole body; no part can be allowed to shirk its work, or the rest will suffer. Thus we see that the circulation is made the primary object of care.

The question is often asked, what can I do to make my muscles strong? Raise the strength of all the vital organs. By doing this the muscles themselves will be strengthened in proportion, and able to undertake any work required by the will without fear of overstrain. The will, too, will be trained to know to a nicety how much work can be undertaken, and also to exercise self-restraint enough not to impose more work than can be carried out. The muscles, nevertheless, are a very important factor in bodily training. We have no direct control over the vital functions of the body. We cannot stop their working without causing death. But the voluntary muscles should be fully under our own control; and it is through the muscular system that we are enabled indirectly, and by reflex action, to work upon the circulation, digestion, respiration, &c.

The too strong development of one part is always won at the expense of another. If only the muscular system be strengthened, as we see it in acrobats and athletes, the strain upon the other organs is altogether disproportionate to their strength, and they collapse under the ordeal. Consumption and heart-disease are common in these professions. One of the first principles in Ling's system of gymnastics is that no pupil should be unduly brought forward—that each pupil should be taught to do his best, quite irrespectively of what the other pupils are doing. The teacher should so arrange the day's work for his pupils that not only every part of the body is exercised, but also that the exercises are taken in a right order, so that the maximum of work may be done with the minimum of labour. The work that a class goes through each day is called a table of exercises; and much of the effect depends on its arrangement. It is usual to keep to the school-class divisions in the gymnasium, as it is a saving of trouble to those who arrange the lessons; but it is by no means the best plan for the children. Those in the same class are presumably of fairly equal powers in their headwork, whatever may be the case with their age and strength. When physical work is the object, physical classification should be used, so that all children in one gymnastic class may be as nearly as possible of the same size and powers, and all can take part in the same work. If children, big and little, weak and strong, be mixed together in one class, some must suffer. Either the strong ones do not get the full amount of work which would be good for them; or, what is worse, the weaker members of the class, who require the most care and attention, are thrust to one side, unable to share in a large part of the class-work.

This is a difficulty not always easy to be overcome where the teacher is single-handed; still, much may be done with a little contrivance. The class may have two or more subdivisions, one of the most advanced pupils being put at the head of each. The greater part of the work is done by all together; and certain exercises are taken by each division under its own leader, superintended by the teacher. This plan is found to work very well, especially with girls. To be head of a division is a great honour, accorded only to those who have proved their steadiness and trustworthiness; and I have seen little girls of ten and eleven putting their division through their exercises with great zeal and care. The success of this plan depends, however, very much upon the teacher, upon his (or her) powers of choosing the right children for the purpose, or his watchfulness during their time of office. At the institute in Stockholm we were all trained to teach in this way.—About 100 children were drilled at once; eight or ten of us each had our own "square," as it was called, and our own appointed place in the gymnasium. Our master watched us all, and it was a marvel to us how he kept his eye on each one. Sometimes, when apparently deep in conversation, he would dart off to a distant part of the room where his presence was needed; or if he noted anything that required general remark, his shrill whistle would produce a sudden stillness and quiet, till he had said his say and given the word of command to recommence. A room to oneself would, doubtless, have been easier; but we learnt to concentrate our attention on our own work, and to overcome many difficulties with an ease we should not otherwise have acquired. A second way of avoiding inequality in a class is to sort the whole school into divisions, according to their size and strength. This is best if the teacher is not able to manage subdivisions: but the arrangements of the school might often render it impracticable. It is better, in the case of classes including children of all sizes and ages, to keep back the strongest rather than let the weak ones remain idle, and to take nothing that the weaker ones cannot share in. From twenty to fifty is considered a good number for a class. A larger number becomes unmanageable. A small number lacks the spirit and vigour so necessary to prevent the daily drill from becoming a weariness, instead of a refreshment and recreation from brain-work. I shall have something to say on the dress of the children; on the arrangement of the daily "table"; on the use and abuse of apparatus; on the question of allowing boys and girls to work together, and on the differences which exist between their gymnastics.

The dress of the children is usually made far more of a difficulty than is necessary. During the class nothing tight should be allowed. Perfect freedom of all parts is an absolute necessity. Boys can and should drill in their shirt-sleeves, and care must be taken that their waistcoats are not narrow across the chest. They should have wide-soled shoes, and the heels, if any, should be broad and low.

Girls need a special dress, in order that their movements may be free and easy. Stays should be unconditionally forbidden during the lesson, owing to the great harm which may result from their use even in a simple movement, such as hanging by the arms. Stays prevent any expansion of the lower ribs, so that really deep, full breathing is impossible; and this may have serious consequences when the heart's action is at all quickened by exercise, even to the breaking of a blood-vessel. With stays, all tight bands, garters, &c., must be done away with. A special dress is convenient for many reasons. It is best made with a tunic and belt, reaching to the knees, and knickerbockers of the same material to match. I do not know if Swedish children are less particular than English, but these costumes used to be made of all sorts of colours and materials; and many came to school with a skirt over, so that the only dressing to be done for the lesson was to slip it off. Some of the tunics were made with kilted skirts and sailor blouses, and looked very pretty. These were, besides, very suitable for ordinary school wear. These may seem trivial points to an outsider, but those who have had to do with gymnastic training in a girls' school know how eagerly the least excuse is seized on to put hindrances in the way. There might perhaps be some excuse for wounded vanity were the old dress of the Stockholm Institute insisted on—viz., long, loose trousers, and a short jacket of a vivid green.

How to Prolong Life.—It is tersely said that "all fools are mad, though some are madder than others," and perhaps among the maddest of them it would be safe to reckon those who, having one life to live, run through with it in vain lamentation over troubles which they cannot avoid, or, what is vainer, over those which they can; and which sometimes are so far in the future that they never come to bother them. To "take time by the forelock," is a very profitable grip to hold on the slippery old fellow; but trouble is not so slippery, and we should practise our haste and activity rather in keeping out of her way as long as possible—to build a wall of mirth, as it were, between her and us, over which her clumsy feet would never venture to climb. Gravity is a grave thing. It may be appropriate at certain times and in certain places, but as an every-day dish it is tough and indigestible. A continual diet of India-rubber would, perhaps, be as favourable to the growth and nourishment of the body and mind. Therefore, if we are wise as well as grave, we can show our wisdom in no stronger way than dropping our gravity, and "playing the fool now and then." Even Socrates himself knew the danger of too much gravity, and frequently took occasion to sink some of it in the gay tide of merriment. "Mirth," says an old writer, "purgeth the blood, confirms health, causeth a fresh, pleasing, and fine colour, prorogues life, whets the wit, and maketh the body young, lively, and fit for any manner of employment." And if we need further proof of its life-giving properties, we can find it in the Bible, set forth in unequivocal and unmistakable words:—"A merry heart is the life of the flesh," saith the Proverbs; and in Ecclesiastes we are told that "gladness prolongs a man's days." In the plodding, matter-of-fact days of the present it seems we have too little time to think of much else than "business, serious business;" and, when we come to think of it, it is a serious business to have our lives shortened with cares and labours—cares and labours that would be a great deal more palatable and far less death-dealing if seasoned with a little mirth and nonsense. Let us reform this altogether, and take profitably to heart Shakespeare's advice:—

"Frame your mind for mirth and merriment,
Which bars a thousand harms."

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"Be timely wise;
With health all taste of pleasure flies."—*Gay.*

PECULIARITIES OF ALCOHOL.

BY DR. W. S. SEARLE.

(Concluded.)

But if the physical results of alcohol are varied, much more diverse are its effects upon the mental and moral nature of man. Indeed, they are as multiform as man himself. One general classification only is possible. Certain individuals (fortunately, the small minority) are always pleasurably affected by stimulants. Each successive dose arouses in them increased exhilaration, and when intoxication supervenes their sensations are delightful. Their every sense is exalted; they fancy themselves endued with every gift—with all power and possession. As is often remarked, these are generally men of the most brilliant intellect, and of the most charming moral qualities. Once led captive by alcohol, these unfortunates seldom have sufficient power of will to refrain from renewed indulgence. No moral considerations avail to restrain them, and, with few exceptions, they yield wholly, finally, and fatally to the tempter. For such men total abstinence is the only refuge. Such an one was Gough, the celebrated temperance advocate, who, from the day of his reformation until his death, was consciously and imminently in danger of relapse into his former vice, and only kept from it by a powerful will aided by strong religious sentiment.

Upon the large majority of men the effects of alcohol, taken to intoxication, are clearly and essentially different; although at first exhilarated, repeated indulgence brings drowsiness, dulness of apprehension, anæsthesia, vertigo, nausea, and vomiting—in short, bodily and mental symptoms which are excessively disagreeable. Of this class very few become drunkards, and those are men to whom anæsthesia becomes desirable as a temporary refuge from bodily pain or mental distress. Herein lies the sole explanation of the fact that the proportion of drunkards to moderate and habitual drinkers remains so small. And hence most largely and influentially the salvation of the world from this fearful vice.

The influence of heredity upon intemperance is a most interesting and profitable study, and one, as yet, but little exploited. It cannot be doubted by any intelligent student that, in the whole range of ætiology, no factor has anything like so powerful and extensive an influence as heredity. Were it not so, natural selection and environment would soon so differentiate mankind as to people the world with monsters. What our ancestors have inherited of tendencies to disease, of longevity or brevity of existence, of mental or moral characteristics, they transmit with more or less of certainty and precision to their descendants. To some extent, also, doubtless, they endow us with what they have become by the influence of habit during their own lives. Thus drunkards beget drunkards or progeny predisposed to inebriety or to some other form of disease. But it is necessary to be upon our guard here, for I think the influence of habit upon the individual and his progeny is currently supposed to extend too deeply and widely. It is true that a large proportion of inebriates can be shown to have had drunken ancestors. But to assume that this relation is the sole determining factor in the statistical result is plainly a *non sequitur* and is against evidence.

To make such a claim is to ignore all the other causes which tend to induce inebriety, and which are many and powerful! Were it true, as is too commonly assumed, what a state of things might we expect in countries where the use of even stronger kinds of alcoholic beverages has been and is almost universal. For example, during the last century the consumption of rum in the New England States was enormous, compared with what it now is. Its use might be said to have been universal. At the convocations of the clergy, in the fields of the farmer, at every wedding and funeral, rum was an essential and unfailing beverage. Those who abstained from its use were marked exceptions. For centuries the Scotch peasantry, as well as many of the higher classes, have been regular and constant consumers of whisky. But in neither of these countries has the number of inebriates increased as it should have done, did habits like these modify heredity so profoundly as some philosophers would have us believe. Out of 600 inmates of the King's County Inebriates' Home nearly one-half are reported as having had inebriate ancestors. And forthwith the conclusion is jumped at that heredity of drunkenness, in this proportion, is proven. But this proposition cannot be accepted by any logical mind. It proves too much to be true. Did space permit, a profitable comparison might here be drawn between the influence of heredity and that of habit. But this and other cognate points of great interest must be neglected.

I cannot refrain from remarking, however, that no branch of science is so untrustworthy as ætiology. The moment men begin to talk of cause and effect, they seem to take leave of logic and even of common sense. In no respect is mentality more barbaric. To the mind of the simple Indian there was a direct causal relation between the will of Columbus and the eclipse which followed. And still, in the noonday of civilization, even intelligent and educated men are far from emancipation in this regard. They must find a cause for effect, and often they thus link together the most distant and incongruous things.

One other idiosyncrasy of alcohol is noteworthy. "*In vino veritas*" is an ancient saw, and it contains truth. But it is only a semi-truth after all. The "Autocrat" says that every man contains a trinity—the real John, John as he appears to himself, and John as he appears to others. Now, it must be owned that in the earlier stages of intoxication the real John is very apt to appear. Alcohol anæsthetizes the mind as well as the body. And as, one by one, environing restraints lose their influence, the true mental and moral characteristics of the man appear. The lecherous becomes unchaste; the generous, prodigal; the brave, reckless; the cunning, treacherous; the sentimental, maudlin. But when intoxication becomes fully developed, there is little except the animal left: not enough, often, to make a decent dog.

When the drunkard is also a dipsomaniac—that is, when his brain is really diseased—then intoxication renders him a madman — indeed, furious, destructive, murderous. Nothing is more awful to the intelligent drunkard, when he has become sober, than the conception of the possibilities of his nature as developed by a debauch. If, then, the proverb be true, it can only be so of the earlier stages of intoxication: when reason has been dethroned, and passion is crowned, *falsitas* has usurped the place of *veritas*. We hear much of dipsomania, but few seem to comprehend its true signification.

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"I had tried all resources, and no one could help me, and had you not visited this country I would, most assuredly, have had to go on in misery to the end of my days.

"I, with my friend Richard Hull, of this place, who took your treatment on my recommendation, and others I know, will ever bless the day you visited Europe. I have often said I would not take 10,000 guineas—no, not half of London—to be placed in the condition I was when I first called on you. When you said you could help me I was elated—hoped, but did not flatter myself that I would ever reach the happy and sound condition I can boast of to-day.

"Why, could the ruptured for a moment realize what you can do, thousands would daily be blocking Chancery-lane to get into your office.

"Thousands have no faith—stick to the old theory, no cure—will go to the grave mortified victims of trusses and rupture. When my case was small, could I have met with you I would certainly have been saved from years of anxiety and that distressing mental feeling, organic ailments, aches and pains arising from rupture as it goes on from year to year.

"This is a grand opportunity for the ruptured to save coming years of agony. I have recommended the treatment to a good many, who promised me they would see you; but I fear some will defer it till you have left this country, and then ever after regret their folly. Thirty years' experience qualifies me to state there is no living man in England has the tact and skill to treat this ailment with the success that you do. I mean what I say—it is no flattery. I speak from my heart, and well will it be for those who heed what I say, and secure the benefit of your services while they may. You have completely overthrown the theory of this country, 'No cure for rupture,' with the cures you have already effected here in living patrons who, like myself, proudly boast of it. You may publish this. I want my countrymen who need your services to see you and be healed. I speak the truth for their benefit no less than for the admiration of what your skill has done for me. I am a business man—deal largely in cattle—well known throughout my county, and many know the great change in my health and capacity to fly around, who can endorse all I say; besides, all who know me will credit the truth of what I say on business principles.

"Long may you live to impart to the afflicted the benefit of your valuable skill, is the prayer of your grateful patient,

"R. RICH."

H. JAMES—RUPTURED—CURED AFTER 19 YEARS' SUFFERING.

"Farleigh-road, Stoke Newington, Mar. 5th, 1888.

"Dr. J. A. Sherman, 64, Chancery-lane, London.

"DEAR SIR,—Highly pleased when you pronounced me cured, yet apprehensive of consequences lest you should be mistaken, some time after, to fully satisfy myself and friends, as well as to learn whether I could engage in active business with safety, I underwent examination by several of the most eminent surgeons and physicians of London, all of whom pronounced the cure complete, some of them expressing great astonishment, declaring it to be a most wonderful cure. Fortified by the opinions of such high authorities, I am quite free of all apprehension of a return of the rupture. I send you extracts from their certificates confirmatory to the efficiency of your method.

"Again expressing my gratitude for your kindness and skill in bringing about this glorious result, I am, yours truly,

"HENRY JAMES."

[Photographs of Mr. James's case before and after cure can be seen at the Office. Copies in Illustrated Supplement.]

FATAL RESULT FOLLOWING THE DISREGARD OF FRIENDLY ADVICE.

"South View Farm, St. Saviour's, Jersey,
"February 27th, 1888.

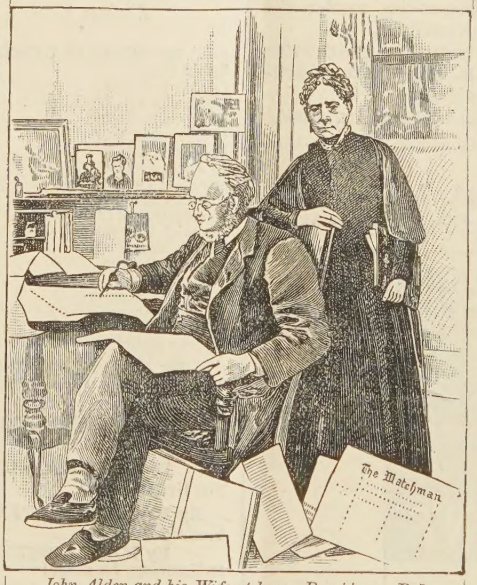
"Dr. J. A. Sherman, 64, Chancery-lane.

"DEAR SIR,—I am glad to learn that Mr. Metidier, whom I recommended, visited you and took your treatment. My friend, Mr. Philippe Gondeaux, farmer and proprietor, was greatly troubled with rupture, and I also strongly recommended him to avail himself of your skill, and gave to him, as I have to a great many others, all the particulars of your treatment, with my experience of the same; but, like a great many others, rather too conservative, and perhaps influenced by his family doctor, he delayed, to the cost of his life. In conversation I told him if he consulted all the doctors in Jersey he would be dissuaded from going to London to consult you. The result of his delay has been dreadful. On Monday night, December 28th, he was attacked with strangulated rupture, with all its horrors. The best medical aid failed to relieve him, and as a last resort an operation was performed. It was unsuccessful—he died Friday, the 30th, after four days' intense agony. He was fifty-two years of age, and I feel satisfied if he had taken my advice he would have escaped strangulated rupture and lived many years.—Yours very respectfully,

"E. POCH."

Rev. John Alden's AUTOBIOGRAPHY, REMINISCENCES, AND GENEALOGY.

COMPLETED AND EDITED BY HIMSELF IN THE 83RD YEAR OF HIS AGE.



John Alden and his Wife at home, Providence, R.I. (U.S.A.), preparing the Book for the Press.

The following is an Extract from Mr. Alden's recent Letter:—

"Providence, 10, Dexter-street, Oct. 16th, 1888.

"Dr. J. A. Sherman, 64, Chancery-lane, London.

"MY VERY DEAR FRIEND,—I wrote you some time since respecting my book, which has taken me over a year to write.

"In the book is the best commendation of your peerless skill you have ever read. I want your commendation spread everywhere. I am perfectly healed of my rupture of forty years' standing, and weigh 30lb. more than I did when you treated me. I believe you saved my life. Thankful, I shall ever pray for your success.—Affectionately yours,

"JOHN ALDEN."

Mr. E. LOCK, 36 YEARS RUPTURED, NOW CURED.

"Dr. J. A. Sherman, 64, Chancery-lane, London.

"DEAR SIR,—It gives me great pleasure in writing to you respecting my rupture. The treatment I am receiving from you makes me feel very confident that you will succeed in curing me. I may say that I have not felt so free from pain for many years as I have been these past few weeks; besides, that careworn feeling has left me, so that my friends speak of my improvement.—Wishing you every success, I remain, yours truly,

"E. LOCK.

"London, 20, Gransden-avenue, London-lane, Hackney."

A VALUABLE DISCOVERY.

In a recent article in these columns we had occasion to draw attention to the circumstance that the American schools of dental surgery were distinctly in advance of our own, and we have now to record the fact that it is to a Transatlantic physician we are indebted for the discovery that the worst cases of hernia are not only curable, but permanently curable, and that without a surgical operation. To those familiar with this distressing malady, and alive to the dangerous nature of the complaint, this statement will seem too good to be true; but an impartial perusal of a pamphlet by Dr. J. A. Sherman, of New York, who is at present on a visit to this country, and whose offices are at 64, Chancery-lane, will convince the most sceptical. We have for so many generations now been accustomed to regard hernia as a common ill for which nothing can be done save an alleviation of the pain by means of a truss, that we fear the great majority will incredulously ask, "Can these things be?" forgetting that nearly every great discovery of the past has been met with similar scepticism, and more than active antagonism. Although Dr. Sherman's system is new to this country, it is—fortunately for him—no new thing in the United States, from whence he hails; and the number of testimonials received by him during the last thirty years from private individuals, from the Press, and from very many physicians, is simply overwhelming and conclusive in his favour.

Having recently had the misfortune to be interested in a case of strangulated hernia, which necessitated one of the most dangerous surgical operations possible, our attention has naturally been drawn to this subject, and we are consequently aware how common is the complaint in its simple form, and how fearfully fatal it is when, as is so often the case, complications ensue, in spite of the patient wearing a truss, the one, and only one, known remedy prescribed by ninety-nine out of a hundred English medical men. Considering that it has been estimated that one person out of every twenty is a victim to this infirmity, and that the ordinary practitioner does not attempt to cure the complaint, but only attempts to allay the suffering by means of the surgical appliance already referred to, the importance of this discovery cannot be over-estimated. Dr. Sherman makes no mystery about his mode of treatment, which is a combination of mechanism and medicinal application, and the success of which has been attested by numberless physicians, amongst whom may be mentioned W. Pryor, M.D., who in a recent article, has thus spoken in favour of Dr. Sherman's appliance, &c.—"I had suffered for forty years, having in vain sought relief from all the different trusses recommended by the best surgeons. Now I am physically sound, and free from the anxieties of strangulation. No spring is used: no pads press upon the spine and the delicate spermatic cord. The pressure is applied exactly to the orifice where the intestine escapes." To those who are wont to regard anything of American origin with a certain amount of suspicion we would say, ere you discredit this remarkable discovery remember the countless inventions that contribute to our daily comfort that have emanated from the same land from whence comes this specialist in a malady which is more common than those unacquainted with the subject would imagine.—*Court Circular*, June 4th, 1887.

MR. JOYCE WRITES AN INQUIRER.

"44, Fangsett-road, Sheffield, Nov. 29th, 1888.

"DEAR SIR,—Your letter has been forwarded to me from Spalding. What you read about in Dr. Sherman's book is all true. You can go to him without any fear, and never regret it as long as you live.

"HENRY JOYCE."

RUPTURE FATALITY—STARTLING FACTS.

From 100 cases of strangulated rupture only seventeen survived. The unfortunate subjects ranged from children to aged persons. Eighty were using trusses or domestic supports. The larger number were subject to surgical operation, from which only eleven recovered. Of those not operated on, only six recovered. The average duration of life from the time of the attack was five days. The sufferings in such cases are terrible. This tabulated report shows the dangers the ruptured are exposed to when seeking protection of the ordinary truss. In contrasting 100 cases treated by the Sherman method, the result is marvellous. None suffered from strangulated rupture—all were relieved, and nearly all were restored to a state of soundness. These facts show conclusively the great advantages the patient has under the Sherman treatment, and why the author is so deservedly popular in this branch of science. In Dr. Sherman's treatment there is no operation, no restriction from labour, but safety and restoration from all the ailments caused by rupture and the use of trusses.

Dr. SHERMAN'S RUPTURE BOOKS.

THOSE WHO DESIRE to fully inform themselves and take advantage of the experience of others, should send for Dr. Sherman's English and American Books, 6d. post free, which contain strong endorsements from physicians, clergymen, merchants, and farmers, who have been treated and cured.

Remember, only for a limited period you can see

DR. SHERMAN at his LONDON OFFICE, 64, CHANCERY-LANE.

By some considerable doubt is expressed of the existence of such a disease. They regard it as a mere pathological hypothesis or invention of physicians in palliation of crime. By the intemperate it is seized upon as an excuse for indulgence in their vicious habits.

Dr. L. D. Mason, consulting physician to the King's County Inebriates' Home, and one of the most distinguished experts on alcoholism in America, defines dipsomania as "an irresistible craving for alcohol in some form, and that to intoxication." Like all other manias, it is more or less pronounced, is marked from sanity by no definite line, and is simply a convenient, proper, and necessary title for a disease of which no well-informed and candid mind can deny the existence, All acknowledge that there are persons sane and persons insane. But the fact that not a few are so near the arbitrary boundary between these classes that it is difficult to decide as to their sanity, furnishes no valid reason why such a distinction should not be regarded as both proper and necessary, either as regards mental philosophy or moral responsibility. Dr. Mason, in a monograph upon this disease, holds that there are three causes for its development:—

1. It may be produced by the habit of intoxication in a man otherwise healthy and of sound heredity. He allows, however, that authorities differ on this point, and concedes that it is an open question.

2. Dipsomania may be caused by sunstroke, by cerebral concussion, or by cerebral disease.

3. Most dipsomaniacs are found among those who have a history of inebriety, insanity, epilepsy, or other neuroses in the direct line of descent, or in collateral branches, or both, who inherit a weak nervous organization, and become dipsomaniacs, not from habit or choice, but from necessity.

With the exception of the first point, he is supported by a long array of English and Continental authorities of great learning and experience. The sole question, then, and one which Dr. Mason concedes to be an open one, is whether this disease may be acquired by an entirely sound and healthful man. In his opinion, this may be the case. This is a most important question. For if his opinion be accepted, many a criminal now in prison, and many another whose crime has been expiated upon the gallows, properly is, or was, rather, a subject for an asylum for the insane.

Such a doctrine ought not to be accepted without the most clear and decisive evidence of its accuracy—evidence which surely does not now exist, and which, probably, can never be furnished. Society cannot afford to believe that habitual inebriety furnishes any excuse for crime or any favourable modification of responsibility. Indeed, quite the contrary has been and should be the decision of courts and juries. It does not appear, however, that there is much danger in this direction.

It is difficult to persuade any twelve men that the drunken criminal is irresponsible, whatever may have been his heredity, even though he may have been the victim of accident, like those mentioned, previous to the formation of the drinking habit. So that, for the present, at least, this question may safely be relegated to the scientists for discussion.

I have elsewhere and at some length considered one of the beneficial effects of alcohol. Others also might be mentioned. For example, it is well known that, of a number of children inheriting phthisis, those who are assisted by alcohol are often enabled to pass the critical period when this disease is wont to develop, and thus avoid it altogether. Nor is it doubtful that, among those in mercantile life who pursue their business with such unremitting attention as is necessary to success in American cities, there are many who might escape early collapse under the enormous loads they carry if they would renounce their total abstinence principles and practices, and partake of wine with their meals. They would eat less, digest better, carry fewer worries to their beds, and so be better able to endure a life which moves at a faster rate and higher pressure than any other on the globe. To some of them, the nervous natures especially, and to the class of individuals named above, the adoption of such a course would prove disastrous. But, just as surely, twice that number would be saved from premature graves or the worse fate of insanity. Every intelligent man can and should either settle this matter deliberately for himself, or act upon the advice of some broad-minded and experienced physician.

THE HEALTH OF THE SKIN.

The surface of the body comprehends a space of about twelve square feet. When it is taken into consideration that the skin is a breathing organ as well as are the lungs, though in less degree, we begin to appreciate its importance. Besides this the skin performs an important function in the way of perspiration. Of the many quarts of fluid that pass out of the body in twenty-four hours, fifty per cent. passes off by the kidneys, thirty per cent. by the lungs, and twenty per cent. by the skin. Then the skin is constantly secreting an oil and excreting substances that are injurious to the body. Its surface is covered with a tiny film of oil; beneath the oil are the horny scales, which come off as scurf. The oily film and the scales protect the underlying tissues. If the oil be removed, the skin is more sensitive to atmospheric influences, irritating gases, and the like; hence it is that those who use much soap, and then are exposed to a cutting wind, find the skin chapped, reddened, and inflamed, for the action of the soap tends to remove the oil from the surface of the skin, and with the oil the dirt. In this connection reference may very appropriately be made to Lanoline Soap. This is a pure neutral soap, containing Lanoline, the design of the Lanoline being to minimize and prevent the action of any alkali set free when the soap is dissolved. Physicians speak of it in the terms of highest praise.

There is a function peculiar to the skin which is seldom or never taken into account, and that is its contractility. The number of tiny blood-vessels, microscopic in size, that permeate the twelve square feet of skin covering the body are counted only by billions. If the skin be weakened, these vessels are dilated, and the internal organs of the body supplied with less blood. When the skin is burned or largely ulcered, there is great difficulty with its healing, and this difficulty is largely attributable to the lost contractility. This fact accounts for ulcers upon the legs having been cured by bandaging. Those whose face and hands are prone to become very red will find in this paragraph an explanation of the redness, and they should bear in mind that a free application of a bland and natural unguent to the skin will afford them the best means of prevention. Lanoline Cold Cream answers this purpose well. It is a delicate, emollient, creamy product, of pleasing fragrance, and is delightful to use. It never turns rancid, and never irritates the skin. It is composed primarily of Lanoline, a fat found in hair, horns, nails, and the horny layer of the skin. Lanoline differs from all other fats in that it is constituted of cholesterine with a fatty acid, instead of glycerine

with a fatty acid. Lanoline Cold Cream never turns bad, is absorbed by the skin at once, does not run like ordinary ointments, and is slightly adhesive, so that it can be applied to mucous surfaces for cold sores.

CROSSING THE LEGS.

THESE are the days when even the most ordinary and apparently inconsequential items in human conduct or social custom must be submitted to the prying gaze of science. Everything, from the kiss that first accentuates the dawn of love to the painful struggles of parturiency, has to have its analysis and physiological explanation. It seems somewhat strange therefore that, in this alert and eager search for cause and effect, no one has yet attempted to analyze and place on a solid scientific basis the practice of sitting with one leg crossed over the other. This is a custom which, we venture to assert, is distinctly American, and one that has been observed and transmitted with pious care by the average American male for the past 200 years. Its prevalence may have become somewhat modified by the incursions, during late years, of foreigners with large waists and weak adductors; but the true American still preserves this detail of his birthright with a constancy and obtrusiveness born of a deep sense of its eternal and inherited fitness.

There are certain inferior races of men who also sit cross-legged. But their case is quite different. They abduct the thighs and cross the legs, assuming a more or less fœtal posture, and one evidently connected with a lower degree of ethnical evolution. The monkey sits somewhat in the same style. In the higher and tenser civilization, however, which has unfolded beneath the stars and stripes, and the ennobling influences of the spoils system in politics, there is nothing fœtal in the posture, but directly the reverse. The adductors of the thighs are brought into play, a nobler group of muscles, and one whose super-activity must, we take it, mean a higher physical development of man.

The conditions of life in America made of Brother Jonathan a man with a short trunk, small waist, and long legs, anatomical proportions exactly suited to a comfortable sedentation with the thighs crossed. This type of man still prevails in New England, the south, and parts of the middle states and the west. With these a posture in which the thighs cross is instinctive. The observations of physiologists and physicists would undoubtedly show that in this position the centre of gravity is thrown forward so that it corresponds more nearly with the tubera ischiorum, thus enabling the sitter to gain a firmer hold upon the seat. Besides this, the weight of the crossing leg doubles the pressure of the foot upon the floor, and this again helps to prevent slipping forward. Whether there is anything in the posture which arouses a particular sense of ease, comfort, and feeling of well-being and contentment, despite a frowning environment, we cannot say. For the American leg-crosser does sometimes carry his habits to extremes. It may require another century of evolution to inoculate those given to the habit with altruism, and teach them that a deeper and truer joy may flow from not wiping their shoes on passing strangers than come even from the highly evolved muscular adjustments of sitting with superimposed knees.—*Medical Record.*

FOR an expansive metal, melt together nine parts lead, two parts of antimony, and one part bismuth.

The Family Circle

"The child is father of the man."—*Wordsworth.*
"In bringing up a child, think of its old age."—*Joubert.*

MISCHIEF-MAKERS IN MILK.

BY ALICE B. TWEEDY.

VERY recently it was announced by Proust that the bicarbonate of soda used as a preservative of milk formed a compound particularly injurious to children—*i.e.*, the lactate of soda.

There appears to be great danger, in the newly aroused fear of fermentative changes in food and of the baneful products of the busy bacilli, that any vaunted preservative or germicide may be greedily seized upon at once, without thought as to the innocence of its chemical activity. This easy credence in antiseptics seems to be characteristic of the minds that shrink with much unreasoning fear from every advance in bacteriological research. Not long since, a novelist, more imaginative than scientific, arraigned Science, because, "the idea of the comma bacillus is more dreadful than that of cholera." This, as an outburst of ignorance, would be excusable, preferring the known horror to the immeasurable unknown. But, to one acquainted with the fact that infinitesimal life swarms about and within us, why should it be terrible to learn that some forms are coincident with disease? If we thrive upon palpitant air, drink water* populated with bacteria, and shelter millions of microbes in our bodies, why should we tremble to find a few unfriendly species that we cannot safely entertain? We talk glibly of "pure air" and "pure water;" but, to be exact, we have only a laboratory knowledge of either, and might as well try to rid ourselves of our surplus population as to provide ourselves with these elements in a sterilized state.

"Dead" and "undesirable" may be equivalent terms in regard to air and water, but we do not yet know whether they can be applied to food. All of the bacilli that visit our articles of diet seem to herald some fermentative or putrefactive change. Sometimes these are agreeable to us, and we aid them in their work of creating yeast, wine, and koumiss. Even then we watch closely and fix a limit to their activity. Generally we are squeamish about their advent in meat, milk, cheese, or eggs, having dire experience of the alkaloids that they manufacture. And, it must be noted, it is not the bacilli themselves that give us trouble; for all we know they may be as digestible as the cholera bacillus was to M. Roche Fontaine. It is the physiological result of their sojourn in the food that constitutes the danger—the unfortunate remainder, or ptomaine, that may be fatal to us. This ptomaine is an alkaloid formed from the medium in which the organism exists, and includes whatever substance may be left of the bacterium itself. Just as man changes the atmosphere about him by exhaling carbonic acid gas and various solid particles of matter, so the bacillus decomposes the tissues and fluids of the body in which it resides.

Nothing more wonderful than this work of disintegration is revealed to us in the economy of nature. The picture of species after species accomplishing, by a brief life, one step toward the final resolution of organic matter into the elementary products, is not sur-

* A cubic centimètre of wholesome water may contain from 53,000 to 770,000 colonies of bacteria.

passed by a study of the glacial chiselling of the rocks, nor of the marvellous influence of the earth-worm in fructifying the soil.

Obviously, we cannot wait for the manufacture of any poison, but must make it an impossibility, if we can, without rivalling any of the toxic effects by our remedies. Acquaintance is occasionally made with a ptomaine before the guilty micrococcus is known; in such cases even more care must be exercised.

Following the investigations of Lister and Hueppe, the ordinary fermentation of milk is traced to the growth of a micro-organism known as *Bacterium lactis*, which converts the milk-sugar into lactic acid. The work of decomposition is then taken up by another bacillus, named *subtilis*, through which butyric acid is produced. Recent experiments made in the cultivation of milk bacteria by Baginski indicate that the *Bacterium lactis* is incorrectly named, and, being responsible for an acetic-acid formation, is better termed *aceti*.

There is also a peculiar fermentator, *Bacterium coli*, that refuses to meddle with milk-sugar alone, but upon the addition of white of egg shows extraordinary activity, furnishing lactic, formic, and acetic acid. These three—*Bacterium aceti*, *Bacillus subtilis*, and *Bacterium coli*—are the normal visitants* of milk, and the changes dependent upon their presence are well understood. The micro-organisms that breed disease and death appear under exceptional circumstances, against which, so far as they are known, we may carefully guard.

The bacilli of phthisis, typhoid, and scarlet fever have been detected in milk supposed to be wholesome. Thorough inspection of cattle and dairies may reduce the frequency of infection; but, until such supervision is the rule, all danger can be avoided by boiling the milk. In the late Congress at Paris on the study of tuberculosis, Dr. Nocard advised this to be done in every case where there existed any tendency to consumption.

A peculiar sickness, which in its malignant form is similar to anthrax, has been traced to a germ occurring in milk. The conditions required for its development are known, and have been artificially produced by feeding cattle with fodder exposed to the dew-fall. The poison is found in sweet milk, butter, cream, and cheese, but not in buttermilk. It is either formed in small quantity, or has the property attributed to it of self-attraction. Neither the ptomaine nor the bacillus producing it has been determined, and they offer a new field for experiment.

The chief mischief-maker is yet unknown, unless it may possibly be identical with the micrococcus found by Dr. Sternberg in cheese. Its ptomaine, however, was isolated by Prof. Vaughan, of the University of Michigan, in 1885, and was called, from the substance in which it was discovered, *tyrotoxicon*—cheese-poison.

The history of this discovery is interesting. Three hundred cases of cheese-poisoning were recorded in Michigan by the Board of Health during 1883 and 1884. Although none of these were fatal, the illness was in some instances alarming, and the evil effects were confined to twelve different cheeses. Samples of these were sent to Prof. Vaughan for analysis. The cheese exhibited no unusual taste or odour, but a dog, with keener instinct than the human, selected a piece of untainted cheese in preference. The detection of the poison proved to be a difficult task. The ptomaine was volatile and unstable, and a method had to be invented for its isolation. An alcoholic extract of the cheese fixed the poison in a fatty acid. An aqueous extract was made and evaporated, when the poison also disappeared. Two years of patient study perfected the process, and Prof. Vaughan succeeded in separating the ptomaine in crystalline shape. During the same year he obtained tyrotoxicon from milk kept in stoppered bottles in the laboratory.

In 1886 there occurred some cases of mysterious poisoning at Long Branch. Twenty-four persons became suddenly ill at one hotel, nineteen at another, and in the following week thirty more complained of similar symptoms. The investigations conducted by the chemists, Newton and Wallace, established the fact that tyrotoxicon was the cause of the sickness. The conditions in which the poison was generated are given in the report as follows: "The noon's milking—which alone was followed by illness—was placed while hot in the cans, and then, without any attempt at cooling, carted eight miles during the warmest part of the day in a very hot month"! Milk-poisoning in Iowa and Michigan was subsequently traced to the formation of tyrotoxicon; and in India, an English surgeon, Firth, discovered the same ptomaine in milk that occasioned sickness.

It might be supposed that so favourable a *nidus* as custard would not be overlooked by the mischievous bacillus. After Vaughan's method of isolating the ptomaine was made known, many analyses of poisonous ice-cream and cream-puffs testified to its industry. Wherever this poisonous agent was identified, the circumstances attending its growth were carefully studied, and the care of the milk, cream, or custard was found to be faulty. In some instances cleanliness had been strictly observed, but other conditions inducing fermentation had been overlooked. In the milk-poisoning at Long Branch proper airing and cooling of the milk were neglected. In Milan, Mich., three fatal cases occurred in the tidy home of a farmer's family. Examination showed that the buttery where the milk was kept had a new floor laid over decaying boards, and some of the dirt-accumulations between these, taken to the laboratory, generated tyrotoxicon in fresh milk. In Lawton, Mich., the custards prepared for freezing stood for some hours in an unventilated building formerly used as a meat-market. The ice-cream made from them poisoned eighteen persons.

According to Prof. Vaughan, tyrotoxicon does not develop below 60 degs. Fahr., and is anaërobic—grows when air is excluded. Some very simple measures, then, are preventive:—

1. Scrupulous cleanliness. A little dry milk on the rim of a can or vessel may breed the germ which will find a culture-ground in fresh milk.
2. A low temperature—below 60 degs. Fahr.
3. Ventilation in an untainted atmosphere.

It is but just to say that these precautions are generally observed by careful dairymen and cream manufacturers. There is grave reason to fear, however, that they are not generally observed after the milk reaches the consumer's hands. Also, the slightest carelessness may affect seriously that class of the community which does not speak for itself—the very youngest.

The symptoms of cholera infantum and poisoning by tyrotoxicon have been proved experimentally to be very much alike, if not identical. Even the *post-mortem* condition of children dying with this complaint is shown by Prof. Vaughan to agree exactly with that caused by tyrotoxicon-poisoning in animals. The enormous per cent. of deaths from the disease occurs between the ages of six months and two years, proving conclusively that heat and atmospheric conditions cannot be the potent

* Twenty-three varieties of bacteria were found in intestines of milk-fed infants suffering with summer complaints (Dr. Booker, Baltimore).

causes. There is only one differing factor in the life of those under six months and older children—the food. The younger class, then, must escape, because a greater majority of them are naturally nourished. Statistics* prove with increasing testimony that *all* artificial feeding is not only unnatural but hazardous, and to be successful requires the most intelligent attention. However, if all mothers and nurses could learn that milk exposed to foul or warm air for any length of time may not only sour, but become the vehicle of a virulent poison, perhaps the summer months would bear a better health record.†

One word of warning may not be amiss. Whenever a young child is fed upon cow's milk, and this causes symptoms of disagreement, the diet should be changed at once either to meat or rice; for if the chief mischief-maker be at work, the best milk will only furnish it with the medium in which it flourishes, and, deprived of this, it will inevitably perish.

PIMPLES AND WRINKLES.

MOST people are unmindful of the fact that the skin performs some very important offices of the system. Through this tissue more than two pounds of water pass outward every twenty-four hours. The skin is also a breathing organ, and if it can no longer do its work death will result just as surely as if the lungs were stopped.

It is reported that at the coronation of Pope Leo X. a little girl was painted all over to represent an angel. Within six hours the child was dead from the effects of the painting. Clothing, too, has an influence upon the health of the skin, hiding it by day and night from the revivifying influence of the sun. The rarity with which many take a bath is another weakening element. The healthiest skin is that of the working man. Exercise enables the perspiration to keep the seven millions of pores clear, and also keeps the skin oily and soft. We say oily: for upon the surface of every healthy skin is a thin film of oil, and when this oily pellicle is removed as in washing with ordinary toilet soaps (by the soda or potash in them) the skin becomes red, weakened, and liable to "break out."

One of the commonest of skin troubles is *eczema*, which comes with a rash, itching, and considerable irritation. It indicates that the skin has trouble in doing its work. It frequently lasts for years, though often not difficult to cure under proper treatment. Erasmus Wilson claimed that it is always curable. Most authorities claim the same. For it a new remedy has been lately introduced into medicine which is attracting wide attention from medical men, on account of the remarkable manner in which it removes pimples and relieves eczematous affections, with itching, that have lasted even for twenty-five years.

This agent is known as Vinolia. It is a plastic emollient cream, perfectly innocuous and safe, and admirably adapted to both a healthy and unhealthy skin. Those who prize their complexions—and what disfigures more than a rash?—cannot do better than employ Vinolia.

Repeatedly in the *Lancet*, *British Medical Journal*, and *Medical Press and Circular* medical men have testified to its unquestionable power of relieving itching, piles, burns, &c., the instant it is applied.

* "Of 591 cases in Liverpool only twenty-eight had natural nourishment; of 341 in Leicester, only two per cent." (*Philadelphia Medical News*, June, 1887).

† "Nine-tenths of the mortality under one year of age is from preventible causes" (Dr. Wood's address before the American Medical Association).

Popular Science Papers

"Blessings on Science! When the Earth seemed old,
When Faith grew doting, and our reason cold,
'Twas she discovered that the world was young,
And taught a language to its lisping tongue."

—*Charles Mackay.*

THE SHADY SIDE OF BRAIN WORK.

PAPERS ON DREAMS, MESMERISM, AND ALLIED TOPICS, BY VARIOUS WRITERS.

TENTH PAPER.

THE ANTECHAMBER OF CONSCIOUSNESS.

BY FRANCIS SPEIR, JUN.

THACKERAY, in that delightful "Roundabout Paper," "De Finibus," confidentially discusses with the reader the genesis of his literary creations. In introducing the subject of this article I shall quote this passage as presenting a pleasing exposition of a certain phase of literary work that is accomplished apparently without any action of the will to account for the result: "I have been surprised at the observations made by some of my characters. It seems as if an occult power was moving the pen. The personage does or says something, and I ask, 'How the dickens did he come to think of that?' Every man has observed in dreams the vast dramatic power that is evinced—I won't say the surprising power, for nothing does surprise you in dreams—but those strange characters you meet make instant observations, of which you never can have thought previously. In like manner the imagination foretells things; we spake anon of the afflated style, when a writer is like a pythoness on her oracle tripod, and mighty words—words which he can not help—come blowing, and whistling, and moaning through the speaking-tubes of his bodily organ." Our literature is full of suggestions such as these, pointing to an intellectual workhouse where all is unknown, but from which comes forth polished, finished work, done how or where we know not.

My attention for some years has been directed to the subject of unconscious cerebration, as it is called, and to the literature of the subject, from the suggestion of its existence by Leibnitz, to its present exposition by Carpenter, Holmes, and Miss Cobbe. It was with a desire to throw the light of further-collected facts upon the relation of a conscious activity to a possible unconscious cerebral activity that I undertook the task of collecting the necessary data. The method employed in collecting these data was the well-known one of the distribution of printed questions to be answered from personal experience. While much of the ground has been gone over before, the questions at issue have been tested largely upon hearsay evidence—tales that somebody has told of somebody else; hence, with our human infirmities, the generalization founded on such facts can fairly be questioned. From a distribution of over six hundred copies of a set of questions upon this subject, I have received one hundred and two answers, largely from professional men and women, and from the students of the upper classes of our leading American colleges, each paper subscribed with the name, age, and address of the sender. In obtaining this mass of material, I have been placed under great obligations to President McCosh, to Professor George P. Fisher, of Yale College; Professor William James, of Harvard College; President Robinson, of Brown; Professor Osborn, of Princeton; Professor

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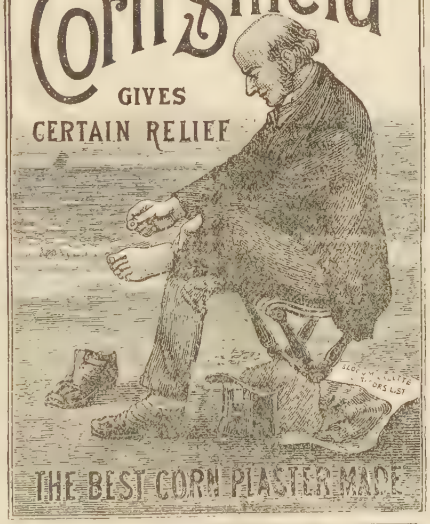

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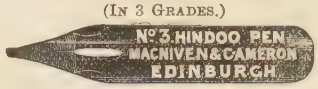

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BEWARE OF IMITATIONS.

Stanley Hall, of Johns Hopkins; Dr. Nicholas Murray Butler, of Columbia; and Professor Torrey, of the University of Vermont. The healthy, normal side of this subject is the only one I shall attempt to consider, leaving the questions of morbid pathology to those who alone can weigh the evidence it throws upon the subject.

If, in our experience, we witness an effect, we know, by the inexorable logic of science, that its existence must be due to some efficient cause. "Verily a tree is known by its fruit," is sound teaching and sound sense—it is axiomatic. If a solution of a mathematical problem can really be revealed to us in consciousness, while we are busied about other things, it must inevitably have been performed by means of the processes which regularly lead to such a result, even if we are not conscious at the time of employing such processes. It could not have come spontaneously, but only as the result. As a consequence, in such a case we would be bound to predicate some exercise of intellectual powers, actively working during unconsciousness. The circular before referred to comprised eleven questions; those, the results of which are specially used here, are as follow:—

Second Question.—"1. When you are unable to recall the name of something wanted, and you say, 'Never mind, it will occur to me,' are you conscious of any effort at searching after it?

"2. When you are, do you feel some trouble or weight in your effort?

"3. When you are not, does the idea ever, when it occurs, seem to have come back spontaneously, without being suggested by any perceived association of ideas?"

Third Question.—"During sleep, have you ever pursued a logical, connected train of thought upon some topic or problem in which you have reached some conclusion, and the steps and conclusions of which you have remembered on awakening?"

Sixth Question.—1. "Can you wake precisely at a given hour, determined upon before going to sleep, without waking up many times before the appointed time?

"2. If you can, then (*a*) is this habitual, or do you often fail? (*b*) Are you conscious, before waking, of any feeling? (describe it), or (*c*) do you come directly from oblivion into consciousness?"

Ninth Question.—"When perplexed at your progress in any work (mathematical, professional, literary, chess, puzzles, &c.), have you ever left it unfinished and turned your attention to other things, and, after some time, on voluntarily returning to it, have found yourself able at once to satisfactorily master it?"

Tenth Question.—"1. Have you ever been conscious of having involuntarily discovered something new—*e.g.*, an invention, a literary or poetical creation, a mathematical solution, &c.?

"2. If yes, then has this flashed into consciousness in the form of a clear conception?"

In order to set forth logically the results of the answers received, I shall group them according to the following analysis: Does there exist in man the power to exert intellectual activity during unconsciousness in these several forms?

First. When the effort is simple by reproducing past experiences in obedience to a mandate of will.

Second. By comparing related facts and arriving at a settled judgment.

Third. When the effort is more complex by continuing old trains of thought begun in consciousness and proceeding logically, step by step, to a rational settled conclusion.

Fourth. When the effort is most complex by commencing and continuing new trains of thought without having voluntarily undertaken or continued them, and arriving at results of original creation as inventions, literary and musical creations, &c.

THE POISONOUS NATURE OF RESPIRED AIR.

MM. Brown-Sequard and D'Arsonval have made a further statement to the Académie des Sciences respecting their discovery of a poisonous principle in water condensed from respired air. New researches, made at the beginning of last year, have shown that this poison, be it simple or multiple, which accompanies expired air, is able in small quantities to kill even without being directly injected into the blood. This toxicity is not due to the presence of microbes in the pulmonary liquid, for the same effects are produced by it after having been subjected to a temperature of 100 degs. C. in a closed vessel. During the past year many experiments have been made to determine the action of the pulmonary poison as it exists in respired air mixed with pure air, the results of which have completely confirmed what has been learnt respecting this poison by other methods. An apparatus has been used for this purpose which, while showing the poisonous property of respired air, has also permitted it to be demonstrated that the carbonic acid of this air has nothing to do with its toxicity.

The apparatus consists of a series of metallic boxes connected with each other, but shut off from the outer air by sealed joints. An aspirator connected with a gas-meter draws a measured current of air through the series of boxes, one after another. It consequently follows that an animal shut up in the first box breathes pure air, while others enclosed in successive boxes must breathe air more and more vitiated. Every care is taken to provide for the drainage of the boxes. It was found that animals shut up in these boxes died sooner or later, according to their distance from the fresh-air box, although the proportion of carbonic acid never became more than 2 or 3 per cent. of the air which proved most deadly. Pure carbonic acid, in the proportion of 20 per cent. of the air, was breathed by the same animals with impunity. Also when the pulmonary poison was arrested by passing the air containing it through a washing-chamber charged with concentrated sulphuric acid, which would not have any effect upon its carbonic acid, the toxic quality disappeared. Hence it may be deduced that the atmosphere of all badly-ventilated rooms, occupied by men or warm-blooded animals, is charged with an unknown active poison which would kill all the inmates if they remained long enough under its influence, and even in a short time affects their health.

Mr. Beecham, of "Beecham's Pills" fame, has issued an illustrated "Holiday Number," published by Messrs. Lambert & Co., 18, Bouverie-street, London, E.C., the possession of which entitles the holder to three months' free insurance. This periodical illustrates a wonderful piece of advertising enterprise. It is sold at the price of one penny, and contains stories by James Payn, G. R. Sims, James Greenwood, Howard Paul, and other well-known authors. We can safely prophesy that this annual will become an assured success, and that it will form a pleasant holiday companion.

Special Notice.—The best stimulant for dietetic and other purposes is the "Skerryvore" (Registered) Blend of Fine Matured Scotch Whiskies, certified of the utmost purity by Mr. E. G. Clayton, F.C.S., Member of the Society of Public Analysts. Sold only by John Twatt, 36, Argyle-place, Edinburgh. Price 20s. per gallon, bottles and cases included.—[Advt.]

Jottings from the Journals

"Th' ingredients of health and long life are
Great temperance, open air,
Easy labour, little care."—*Sir Philip Sydney.*

Meat Inspection.—To show the need of meat inspection in Glasgow and elsewhere being in the hands of medical men and veterinary surgeons, let us briefly inquire into the quality of the meat unprincipled dealers submit for inspection. First, there is the meat of animals which have not been killed and bled, but which have died. Lately a consignment of meat was despatched to Glasgow from a station in Aberdeenshire, and would in due course have found its way to Moore-street, where it might have been passed, but for the disinterested action of a public official in the northern county, who sent a telegram to the Glasgow authorities that the beasts in transit had suffered death by drowning. Shortly afterwards, an attempt was made from the same county to foist a drowned cow on unsuspecting Glasgow, and this deception was defeated in a similar way. Again, it is quite a common thing in the Highlands for sheep to be found dead in the morning, having died in the night from braxy; and horned cattle occasionally die after a very brief illness from so-called apoplexy. In such cases the owner is tempted to send the carcase to any market where it will pass, and the fact that both those diseases are forms of splenic fever is probable unknown to him, and unknown to the meat inspector. Secondly, there is the meat of animals which have been killed and bled, *in articulo mortis*. It is quite usual, when an animal is suffering from any complaint, to have it nursed and treated as long as any hope of recovery remains, and then when it is obviously dying to kill it and send the carcase to the nearest meat market. Thirdly, there is the meat of animals which have been the subject of epizootic disease, *i.e.*, foot and mouth disease, pleuro-pneumonia, anthrax, and anthracoid disease, &c. Such animals are often killed at an early stage of the disease, lest they should infect others, the carcases to the untrained eye showing no trace of pathological change. In the fourth place, there is meat derived from tuberculous cattle. This, it appears, is not always seized at the Moore-street Market, even when recognized. "Where the animal," says the chief inspector, "is in good condition and but slightly affected, the portion affected is removed and the rest of the carcase passed." And there is little doubt that the practice in Glasgow in this respect is by no means exceptional. Yet the Departmental Committee of Pleuro-pneumonia and Tuberculosis reported, that "Although the bacilli may be found but rarely in the flesh, still the chance of their being present either there or in the blood is too probable to ever allow of the flesh of a tuberculous animal being used for food, under any circumstances, either for man or the lower animals." In the fifth place, there is meat which is infected with encysted parasites. These, as every one knows, are by no means rare in pork, and although an ordinary intelligent butcher or lay inspector will readily recognize the *cysticerci cellulosæ*, there is reason to believe that *trichinæ* are often unnoticed, and that the pork containing them is sold and eaten. In the sixth place, there is meat which has undergone chemical or fermentative change—in other words, meat which has begun to decompose. Even here it is not uncommonly a nice point whether it is fit for human food or should be seized. Lastly, there is meat which is exposed in the butcher's shop as beef, but which is really horse-flesh, or meat which is offered as lamb and is really young goat. Mr. Lees Knowles' inquiries have shown that the flesh of horses is largely sold as beef, and an instance of goat being offered for lamb came under our notice a short time since. There are thus seven distinct ways in which meat is rendered unfit for human food, and the efficient inspector must not be merely skilful and honest, but must have special knowledge which even a medical man or veterinary surgeon will be some time in acquiring. No lay inspector, who is a policeman or a retired butcher, can acquire the necessary knowledge, or should ever be trusted unaided to decide on the fitness or unfitness of meat for human food. Inefficient or perfunctory inspection is almost worse than none at all, as, in effect, it hall-marks wholesome and unwholesome meat with the same stamp, handicapping the former and giving to the latter a good character which it does not deserve, and an artificial value.—*Sanitary Record.*

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Good and Bad Milk.—Sir Thomas Dyke Acland, writing to the *Daily News* on "Good Milk and Bad Milk," says: The subject is most important. I have for many years been striving to encourage the sale of good milk to the poor; but the writer is doing serious mischief in denouncing skim milk as "a miserable refuse, recommended by people who ought to know better as a nutritious food." To any one who will reflect for a moment it must be obvious that if an infant or a calf can be reared for weeks or months on milk alone, it is forming fat and flesh and bone. If the cream or butter (containing only carbon and the elements of water) be taken out of the milk, the flesh-forming and bone-forming matter must be left in the skim milk, and is therefore nutritious. When butter is selling at 1s. 6d. per pound, fat can be bought cheaper in bacon or mutton fat, or dripping. The following information is taken from an excellent paper by Professor Brown, of the Veterinary Department, on "Milk as a Food," which appears in the last number of the *Journal of the Bath and West of England Society*. Professor Brown's authority will not be disputed. "Milk, according to popular belief, is more or less nutritious according to its richness, *i.e.*, the amount of fat which it contains. Skim milk is held in low estimation. Chemists have tried to teach people to avoid this very serious error, but without much effect, and consequently skim milk, a valuable and nutritious food, is looked upon as refuse." Professor Brown quotes analyses made by the late Dr. Voelcker, and referred to by his son in his lecture on milk at the Parkes Museum, showing an average of 3 to 4 per cent. of fat in skim milk, and an average of muscle-forming matter of about 8 per cent. We sell the skim milk after scalding on the Devonshire system at from ½d. to ¾d. a quart in this neighbourhood. It is much valued by the labouring class. It probably contains a very small amount of the fat which, by the more complete action of the separator, is removed, and the scalding process causes it to keep sweet longer than the skim milk of raw cream. There may be abuses in the sale of what professes to be good new milk below the market price of 5d., but that is no reason for discouraging the sale of sweet skim milk at its fair value to the poor.

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The Commission on Vaccination.—Mr. Ritchie made numerous quotations from Dr. Barry's report on the outbreak of small-pox in Sheffield, of which he said that "a more able and exhaustive report was never laid before the House since the question had been in debate." One very important point has been worked out by

Dr. Barry for the first time on a large scale, namely, the proportion of children attacked to the number of children exposed to small-pox in the vaccinated and unvaccinated classes respectively. They are as follows: In the vaccinated the attack-rate was 78 per 1,000; in the unvaccinated the attack-rate was 869 per 1,000. The death-rate of the vaccinated was 1, and of the unvaccinated 381 per 1,000. The protection enjoyed by the vaccinated over the unvaccinated was, therefore, 11-fold against attack, and 381-fold against death. Then as regards hospitals: of 161 persons employed in various hospitals, 18 had had small-pox previously, and none of these fell ill; 62 were vaccinated only in infancy; of these, 6 were attacked and 1 died; the remaining 81 had been revaccinated, and not one caught small-pox, As regards the officials employed in the Post Office, they were 290 in number, and had all been revaccinated, and not one of them took the disease. The net result in the Sheffield inquiry showed that, if the vaccinated children had been attacked at the same rate as the unvaccinated, there would have been 7,000 attacks instead of 353, and 3,000 deaths instead of 6; and, up to the end of the epidemic, 3,400 deaths instead of 9. Sir Lyon Playfair, in comparing Leicester to Leipsic, drew a striking picture of the futility of quarantine in preventing small-pox in a large community. He stated that in Leipsic from 1851 to 1870 methods similar to those of Leicester were employed, and there were only 29 deaths from small-pox; but during the great epidemic in 1871, 9,600 per million of the general population died of the disease, and 30,000 per million of the population under the age of 15. He also pointed out that in Berlin in 1870 the deaths from small-pox were 223 per million; but in 1874-75 the Compulsory Revaccination Act was passed, and in 1886 there was only 1 death per million. Such figures need no comment; they speak for themselves. He also exposed the fallacy of the idea that sanitation will do away with small-pox. "His honourable friend said it was true that the mortality of children was less from small-pox, but that adults died in larger numbers than before. Did not his honourable friend perceive that that completely upset his idea that sanitation protected adults and not vaccination? Of sanitation adults and infants participated alike, and therefore it was not the cause of the decrease of infant mortality. The differentiation of infantile and adult mortality was only due to compulsory vaccination."—*British Medical Journal.*

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THE "SANITAS" DISINFECTANT PREPARATIONS.

From time to time in our pages the "Sanitas" preparations have been warmly recommended, and as the warm weather of summer is upon us, with its concomitant risks of disease engendered by decomposing matter, by foul drains, and allied conditions favouring illness and the spread of epidemics, we deem it desirable to direct attention anew to the merits of these excellent and non-poisonous manufactures. "Mercuric Bactericide" contains corrosive sublimate united with hydrogen peroxide, combining thus two of the most powerful disinfectants known to science. The merits of this preparation may be briefly stated, inasmuch as it offers to the public a form of germ-destroyer of the utmost use in preventing the spread of infectious diseases. This bactericide has its elements combined in such a form that the solution keeps permanently free from precipitation and without loss of strength. It is fatal to all germs and spores; it destroys all poisonous products by oxidation, and it retains its antiseptic character even when in contact with mucous membranes and other tissues, as it does not coagulate serum or albumen like ordinary solutions of mercuric chloride. In using this solution, enamelled vessels or vessels of glass or stoneware should be employed in preference to those of metal. The bottle must be kept in a cool place out of the sunlight, and mixed as required.

(1), To prepare a solution containing one part of bichloride of mercury in one thousand, add one drachm of bactericide to six ounces of water; in other words, one part of bactericide in fifty parts of water should be employed. (2), To prepare a solution containing one part of the mercuric salt in two thousand, add one drachm of bactericide to twelve ounces of water; in other words, one part of bactericide in one hundred parts of water should be employed. For disinfecting purposes, the fluid as prepared in (1) will be found of great value. It should be added to the excreta of patients suffering from infectious diseases, such as typhoid fever, cholera, dysentery, scarlet fever, small-pox, &c. Soiled linen should be steeped in it preparatory to leaving the sick-chamber, and remain therein for fully one hour, and then be boiled in water. Sick rooms (in infectious cases) should be thoroughly washed with a similarly diluted solution. In the performance of surgical operations, it should be prepared as in (1), a sponge dipped into the solution being at intervals squeezed over the wound as the operation is proceeding, and the instruments used should be placed on a towel or cloth previously saturated in the solution within reach of the operator. The solution as prepared in (1) will be found useful as a disinfectant in cases of nasopharyngeal diphtheria, putrid sore throat, gonorrhœal ophthalmia, otorrhœa, ozœna, syphilitic ulcerations, gangrene, chronic diarrhœa, dysentery, and vesical catarrh with fœtid urine. As an antiseptic for pulpless teeth this solution as prepared in (1) renders excellent service. In the treatment of nauseous empyemata, the fluid should be used as prepared in (2) to wash out the pleural cavity, a few applications only being necessary to bring the parts into a healthy condition. In the carrying out of antiseptic midwifery, the solution will be found of extreme service. For syringing out the uterine cavity, it should be prepared as in formula 2. We may add that other forms of "Bactericides," or germ-killing fluids, are made by the "Sanitas" Company. These include, as their active agents, borax, boric acid, chloral, chloride of zinc, calcic iodate, chloroform chloral, and other substances.

The other preparations of the "Sanitas" Company are so well known that a brief mention only of their merits is required. The bactericide above described should be used in all cases of infectious diseases, while its germ-killing powers are admirably imitated by the "Sanitas" Fluids, which, in our experience, have acted perfectly in the disinfection of the clothes of fever-patients, and for making solutions for application to non-healing sores, ulcers, and other ailments. The ordinary bath may be made more refreshing by the addition of "Sanitas Fluid," while "Sanitas Oil" has attained a high reputation for the cure of colds when used in an inhaler. The "Sanitas Soaps" include also varieties of toilet, household, and soft soaps, adapted for ordinary and disinfecting purposes, and for the nursery (and especially in curing eruptions of the scalp in infants) they are invaluable. The "Sanitas Air Purifier" is adapted for placing on a plate or saucer, and readily gives off its vapour. It should be substituted for the meaningless practice of placing in saucers disinfectants which give off no valuable products whatever. Space fails us to enumerate in detail the many admirable and useful articles made by the "Sanitas" Company for surgical, medical, and household use. Soaps for animals, disinfecting powder, furniture cream, tooth-powder, antiseptic gauze and lozenges, and sheep dip, are to be found, with many other articles, in the lists of the Company. Suffice it to say, that wherever disinfectants are required, or cleansing and purifying means needed for body, house, clothes, or atmosphere, our readers cannot do better than purchase "Sanitas" preparations. They are powerful germ-killers, pleasant to use, and are sold at a moderate price.

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As many of our readers who live in remote districts prefer to obtain HEALTH from the Publisher direct, and as we are desirous of increasing the already large number of subscribers who give us a yearly order for the journal, we offer the following FREE GIFTS and BONUSES to all who subscribe to HEALTH for one year or longer :—

(1.) To each Subscriber who remits 10s. 10d. to the Publisher, entitling him (or her) to receive one copy of HEALTH, post free, for one year, we shall present a copy of Dr. Andrew Wilson's work, entitled "A Manual of Health Science" (Longmans & Co.), value 2s. 6d.

(2.) To each subscriber who remits 21s. 8d., entitling him or her to receive two copies of HEALTH weekly, post free, for one year (or one copy for two years), we will present Dr. Richardson's "Ministry of Health" (Chatto & Windus), value 6s. The copies of HEALTH so ordered may be posted to separate addresses.

(3.) To each person who subscribes 32s. 6d., for three copies of HEALTH, post free, weekly, for one year, we will present the volume by Dr. Richardson mentioned above, and also the handsome, illustrated book entitled, "Studies in Life and Sense," by Dr. Andrew Wilson (Chatto & Windus), value 6s.—being a free gift of the total value of 12s.

The bonus last mentioned will also be presented to anyone who succeeds in obtaining three yearly subscribers to HEALTH, and who remits to the Publisher the sum of 32s. 6d., together with the names and addresses of the persons to whom the copies are to be posted each week.

As the literary gifts above-mentioned constitute books containing solid and reliable information regarding health and other matters of popular scientific interest, it will be seen that the above scheme, while intended to increase our already large circulation, also offers distinct advantages to new subscribers who guarantee by their subscriptions a year's support to this journal. All communications regarding subscriptions and other purely business details connected with HEALTH should be addressed directly to the PUBLISHER, 2, Paternoster-square, London, E.C., and *not to the Editor*.

Our Letter-Box

"Conference [maketh] a ready man."—*Bacon.*

NOTICES TO CORRESPONDENTS.

All Communications for the Editorial Department (including Books for Review, Specimens of Sanitary Appliances, &c.), to be addressed to "THE EDITOR OF HEALTH," 2, PATERNOSTER-SQUARE, LONDON, E.C. *Those intended for the Publishing Office to be sent to* MR. A. P. WATT, THE PUBLISHER, *at the same address.*

RULES FOR CORRESPONDENTS.

OWING to the mass of letters which reaches us each week, we respectfully direct the attention of Correspondents, desiring replies in the LETTER-BOX DEPARTMENT of HEALTH, to the following rules :—

"ELECTRICITY IS LIFE."
(TRADE MARK.)

PULVERMACHER'S
WORLD-FAMED
GALVANIC BELTS,

FOR the CURE of NERVOUS DISEASES,
HAVE RECEIVED TESTIMONIALS from
THREE PHYSICIANS to
HER MAJESTY the QUEEN,
THE ACADÉMIE DE MÉDECINE of Paris and
FORTY MEMBERS of the
ROYAL COLLEGE of PHYSICIANS of LONDON.

RECENT TESTIMONIALS.

GALVANISM *v.* EXTREME NERVOUS DEBILITY.
Littlehampton, May 20th, 1889.
Dear Sir,—In answer to your kind inquiry, I am pleased to state that I am thoroughly cured of my complaint, for which I am very thankful. If you publish this, please omit my full name and address.—Yours truly,
N.B.—Full name and address on application. C. S.
Messrs. J. L. Pulvermacher & Co., 194, Regent-street, W.

GALVANISM *v.* NERVOUS EXHAUSTION.
3, The Grove, Eccles (near Manchester), May 16th, 1889.
Dear Sirs,—I have derived very much benefit from wearing the Galvanic Belt supplied me by your firm in December last, and it has proved far more effectual in my case than all the medicine I have taken. You may make any use you like of this letter, and believe me, yours truly, W. BENNETT.
Messrs. J. L. Pulvermacher & Co., 194, Regent-street, W.

GALVANISM *v.* NERVOUS DEBILITY.
30, Mary-street, Southsea, May 11th, 1889.
Dear Sir,—It is with much pleasure I write to say that since wearing your Galvanic Belt a most remarkable improvement has taken place in my health, and nearly all the old symptoms I was suffering from have vanished, for which I feel very grateful. Many thanks for your kindness in my case, and wishing you every success.—Yours respectfully, C. TINGEY.
Mr. J. L. Pulvermacher, 194, Regent-street, W.

GALVANISM *v.* PARALYSIS AND SCIATICA.
40, College-road, Bromley, Kent, May 8th, 1889.
Gentlemen,—I am very pleased to give you a testimonial for your Electric Belt. I bought one of you in January last, when I was suffering from sciatica and slight paralysis, and after wearing it for two weeks I was greatly relieved, and in three months' time I was completely cured.—Yours very truly,
Messrs. J. L. Pulvermacher & Co., 194, Regent-street, W. W. HOLMES.

GALVANISM *v.* LOCAL WEAKNESS.
Cornerville, Buncrana, Co. Donegal, May 1st, 1889.
Gentlemen.—I have very much pleasure in recommending your Galvanic Belt and Chain Battery for the cure of extreme local weakness and debility, and you are at liberty to make use of my name and address.—Yours faithfully, C. H. COCHRANE.
Messrs. J. L. Pulvermacher & Co., 194, Regent-street, W.

GALVANISM *v.* NERVOUS EXHAUSTION.
28, St. John-street, Newport Pagnell, April 29th, 1889.
Dear Sir,—I am pleased to say that to me your invention of the Galvanic Combined Bands is invaluable. Having worn them with so much benefit, I can bear testimony to their comfort and support.—Yours truly,
(Mrs.) A. F. COOCH.
Messrs. J. L. Pulvermacher & Co., 194, Regent-street, W.

GALVANISM *v.* RHEUMATISM & NERVOUS DEBILITY.
Erin Manor, Burgess-hill, April 27th, 1889.
Dear Sirs,—I have great pleasure in informing you that the Galvanic Belt I got from you last January for my old gardener has been of the greatest benefit to him; he now sleeps well, his appetite is good, and he has greatly increased in flesh. Under God's blessing your Belt has been the means of restoring this poor man to health, and he is now able to resume his work, even to stooping and digging, neither of which he has been able to do for the last five years.—Yours faithfully,
W. R. E. ALEXANDER, Major-General.
Messrs. J. L. Pulvermacher & Co., 194, Regent-street, W.

GALVANISM *v.* NERVOUS DEBILITY.
3, Baltic-place, St. Luke's, E.C., 8th April, 1889.
Gentlemen,—In reply to your kind inquiries as to the efficacy of your Galvanic Bands, I am pleased to state that your treatment in my case has been entirely successful, and if I may judge by my feelings at the present time it is a permanent cure.—Yours truly, S. WILTSHIRE.
Messrs. Pulvermacher & Co., 194, Regent-street.

GALVANISM *v.* NERVOUS EXHAUSTION.
The distressing symptoms of Nervous Exhaustion and Debility are speedily removed by means of PULVERMACHER'S world-famed GALVANIC BELTS, which are so arranged as to convey a powerful electric current direct to the affected parts, gradually stimulating and strengthening all the nerves and muscles, and speedily arresting all symptoms of waste and decay.

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1. All questions are answered free of charge in the columns of HEALTH. A limited space only, is available for the insertion of replies each week.
2. All letters must be legibly addressed to "The Editor of HEALTH, 2, Paternoster-square, London, E.C.," *and to no other address.*
3. Questions to which answers are desired by post, are so replied to solely at the Editor's discretion. If no answer is sent by post, the query will be replied to in the "Letter-Box" columns of HEALTH. A stamped addressed envelope must accompany all queries to which a private reply is desired.
4. Addresses of physicians and surgeons will, as heretofore, be forwarded FREE to Correspondents on their enclosing a stamped addressed envelope for reply.
5. Correspondents are requested to write on one side of the paper only, and to make their inquiries as brief as may be consistent with clearness.
6. From the necessity of sending HEALTH to press early in the week, no Correspondent can be replied to in the "Letter-Box" columns in the same week in which the inquiry is received. Replies crushed out of any issue will be found in the succeeding number.
7. No Post Cards must be used in sending queries. Violation of this rule deprives the sender of the privilege of a reply.

QUERIES AND ANSWERS.

REPLIES: GENERAL, SANITARY, AND MEDICAL.

[Readers of HEALTH will kindly note that when back numbers of the journal are desired, the letters containing such requests and stamps for the numbers should be addressed to the PUBLISHER of HEALTH, 2, Paternoster-square, London, E.C., and *not to the Editor.*]

REX.—See advice given to "Charles Rae" in the present number of HEALTH. Keep your hair short for a time, and wash it once a week with Bayley's Spermaceti Soap (17, Cockspur-street, Pall-mall, London, S.W.) and tepid water.

B. S.—We do not know the firm you name; but you should try Mellin's Food, which is undoubtedly one of the best for infants that is made.

E. G. R.—Your present appliances are defective. Fit up one of Twyford's "Unitas" Closets, and you will find all your troubles to disappear.

E. M. P. S.—Soften the water you wash with by means of the Oriental Aromatic Salts (advertised in our pages), and you will experience the benefit of the change. Use Vinolia Soap in your case.

C. GRACE.—Try the "Nebulizer" advertised in HEALTH, as a means for curing the condition you describe, and use it as directed in the printed instructions accompanying the apparatus.

D. BRYCE.—You need be under no apprehension. Simply read the pamphlet recommended to "M. Peters" in the present number, and by following out its directions as to diet, &c., you will get quite well.

WHARTON LIDDALL.—1. Eat slowly, masticate your food well, and do not eat to repletion. Take five drops of Pure Terebene, on a piece of sugar, when you are troubled with flatulence. 2. No, the amount is not excessive at all.

F. S. A.—See advice given to "M. Peters" in the present number. Follow out the directions given as to diet, cold-sponging, and tonics in the pamphlet; and if not cured, write again. Bear in mind that such a result as that you name often arises from mental overwork.

S. B. DOWN.—Your fault is that you brood over your fancied ailment till it acquires an exaggerated importance in your eyes. You need no drugs at all. Follow out the directions as to diet and avoidance of constipation given in the book you have read, and take a cold sponge bath each morning. Your occupation is too sedentary, so take open-air exercise daily. These means will cure you without drugs at all. The magnetic appliance you name is a quack affair.

T. N.—Any chemist will sell you the appliance you name; but its use is not advisable. Send stamped addressed envelope for private reply.

OXENOPE.—Give Vinolia a trial. Wash the parts affected with Vinolia Medicated Soap, night and morning, and after washing apply Vinolia itself as an ointment. Both may be had from Messrs. Roberts, 76, New Bond-street, London, W. Write again, if not cured.

M. BRYCESON.—1. The appliances of Messrs. Pulvermacher, 194, Regent-street, London, W., should be tried by you. 2. Pitkeathly Water.

A. A.—Try the following: Powdered rhubarb and powdered calumba, of each ten grains; aromatic powder, five grains. Mix: and take one such powder at bedtime.

M. PETERS.—You must read and carefully study the pamphlet "A Lecture to Young Men" (post free, 1s. 1d., 5th Edition, from H. Renshaw, 356, Strand, London, W.C.), and follow out the directions as to food, cold sponging, and tonics there prescribed.

J. S. S.—Try the following mixture: Carbonate of ammonia, one drachm; bicarbonate of potass, a drachm and a half; infusion of chiretta, six ounces. Mix. A tablespoonful thrice daily before food.

CANDYTUFT.—The usual dose of antipyrin is ten grains, repeated every three or four hours; but in a case such as that you name we should not advise you to use it, save under the guidance of a medical man. It is not always safe or advisable to check the pains in such a case.

IONA.—The cause is constipation. Read the pamphlet recommended to "M. Peters" in the present number, and follow out the diet remedies, with Cascara, therein recommended. The pamphlet will explain matters fully to you.

TINALING.—Send us stamped addressed envelope, and we will recommend you a London surgeon, whose advice you should follow if you wish a permanent cure for your trouble. The American advertiser you name is a quack. We should not advise you to take drugs until you have seen a surgeon. Avoid excess of vegetables.

AN AFFLICTED ONE.—Use the ordinary Vinolia Soap, and wash the parts with tepid water night and morning. Dry the parts gently with an ordinary soft towel, and apply Vinolia so long as your symptoms remain.

JOHN RENRUT.—The patient should bathe his feet night and morning in tepid water, in which salt has been dissolved, and after washing he should dust Woolley's Sanitary Rose Powder on his feet and into his stockings. The latter should be changed twice daily, and his shoes (which should be worn in place of boots) should be of easy-fitting nature. If not cured, write again.

ANXIOUS.—Yes; try the prescription you name, and if you are not bettered thereby, write again and let us know.

R. HILLIARD.—You should consult a good surgeon, and take his opinion in your case. If not able to afford a fee, go to the hospital in your town, and consult one of the physicians there. As far as your hair-troubles are concerned, follow the advice given to "A. Gordon" in HEALTH of last week.

M. COLLINS.—Use, thrice daily, an injection made by adding a teaspoonful of Condy's Fluid to a tumbler of tepid water. Take a dose of Lamplough's Pyretic Saline in the morning occasionally.

L. S.—You should peruse the article on "Acne and Blackheads," published in HEALTH No. 199, and follow out the treatment given in that paper.

LOYS.—The following will suit your case:—Chlorodyne, one drachm; ipecacuanha wine, one drachm; syrup of squills, one drachm; glycerine, to make up two ounces. Label, "A teaspoonful in a little water at intervals."

E. P. S.—Use a chloride of ammonium inhaler. Apply to your druggist, or to Messrs. Burroughs, Wellcome & Co., Snow-hill-buildings, London, E.C., for an inhaler, and directions regarding its use.

EDINA.—Take twenty or thirty drops of the Cascara Cordial, or two Cascara Tabloids, twice daily, between your meals. Eat wholemeal bread, stewed fruits and vegetables, and avoid tea and coffee. Substitute for tea, morning and night, Scott's Midlothian Oat Flour.

CUSH.—To make hair-wash powder, take powdered borax, one pound; camphor, one drachm; oil of bergamot, twenty drops. Mix these ingredients thoroughly.

REGULAR.—Apply daily to the piles a lotion consisting of one part Hazeline and two parts water, and apply also each night the ointment sold by Bayley, 17, Cockspur-street, Pall-mall, S.W. Pyrmont Tablets should also be given as part of the cure.

ALFREDO.—The best means for increasing or decreasing weight are those by diet. Read the articles in HEALTH (to be had of the Publisher), "How to get Thin or Fat;" and also the article on "A New Fat Cure," published recently in this journal.

G. H. F.—Take the following mixture :—Chloride of ammonium, two drachms; spirits of chloroform, one drachm; simple syrup, three drachms; water to make up six ounces. A tablespoonful to be taken in water every four hours.

C. GAY.—Try a dose of Lamplough's Pyretic Saline on rising in the morning, and follow out the other food-directions already given you. You will get quite well in time.

Delicious Drink

Horsford's Acid Phosphate

Makes a healthful and invigorating drink with water and sugar only. It harmonizes with such stimulants as may be necessary to take. A desirable substitute for lemons or lime juice. Allays the thirst, aids digestion, and relieves lassitude. A teaspoonful added to a glass of hot or cold water, and sweetened to the taste, makes a delicious lemonade, and will be found refreshing and invigorating.

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Beware of Substitutes and Imitations.

AUTION.—Be sure the word "Horsford's" is printed on the label. All others are spurious. Never sold in bulk.

Take a cold sponge-bath each morning, and use brisk friction thereafter.

ALEX. B.—We advise you to consult the French Hygienic Society, 6, Conduit-street, London, W., and use their Pomade Tricophile.

MAKUS.—Wash the affected parts with Vinolia Soap only till you are well, and apply the following paste, night and morning:—Resorcin, one drachm; lanoline, vaseline, zinc oxide, and powdered starch, of each, two drachms. Mix, to form a paste.

F. A. M.—Take a dessertspoonful of Scott's Pure Cod Oil Emulsion after your meals; and each evening, at bedtime, inhale the vapour arising from a pint of very hot water to which you have added a teaspoonful of Sanitas Oil.

NIX.—Try Cascara Cordial in twenty-drop doses, taken in water, once or twice daily, between meals; and follow up this remedy and render its effects permanent by the use of Grant's Oat Flour, stewed fruits, prunes and apples, ordinary vegetables, &c. Try Dahl's Cakes as part of the treatment.

E. F. G.—A dusting powder, to be applied to chafed parts, is composed of oxide of zinc, one part; powdered starch, two parts.

CERX.—A truss that will fit you, and which can be worn without pain or inconvenience, may be had from the Medical Battery Company, 52, Oxford-street, London, W.

FRANK LAIDLAY.—Take twenty drops of Fer Bravais after your meals thrice daily in water, and wash the affected parts night and morning with Bayley's Soap and warm water.

MARK.—Use Bunter's Puriline Tooth Polish and the Puriline Mouth Wash regularly, and brush the teeth night and morning.

E. FAITHFULL.—The mineral water which will suit you best is Pitkeathly Water—advertised in our pages. Take this water regularly, and avoid excess of meat food. Fer Bravais, in fifteen-drop doses after meals, should also be tried.

B. G. S.—Use Sanitas Fluid for the skin and clothes. Use the powder to the closets and sinks. Sanitas Disinfecting Soap and Cleansing Powder may be used for the house generally.

LOTHIAN.—Try the effect of taking ten grains of antipyrin in water, between your meals, twice daily. Messrs. Burroughs, Wellcome & Co.'s Antipyrin Tabloids (five grains each) may be tried as a handy form of taking the drug.

A. MACRAE.—Take twenty drops Cascara Cordial in water, once daily, an hour before breakfast, as a corrective to constipation; look to your food; avoid tea and coffee, and take Grant's Oat Flour in place thereof; eat stewed fruits, and take Dahl's Cakes for a time.

MARGARETTA.—Try the following:—Subnitrate of bismuth, six grains; carbonate of magnesia, ten grains; powdered gum arabic, twenty grains. Mix, to form a powder. Stir in a cup of boiled milk, and when cool, stir up again before being swallowed. To be taken twice daily after food.

CHARLES RAE.—Give the following hair-lotion a trial:—Aromatic acetic acid, one ounce; vinegar of cantharides, two ounces; spirits of rosemary, three drachms; glycerine, one ounce; rose-water, to make up eight ounces. Mix. Label, "The Hair-Wash: rub a little into the roots each night, either pure or diluted with water."

SODEN.—Wash the parts affected night and morning with Bayley's Spermaceti Soap and tepid water; a little ointment composed of one part iodoform added to ten parts benzoated lard, to be rubbed on the affected spots after washing, twice daily.

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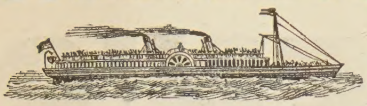

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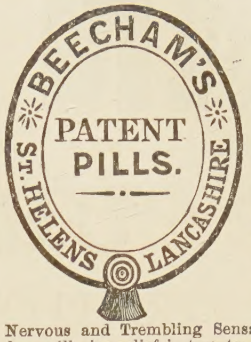

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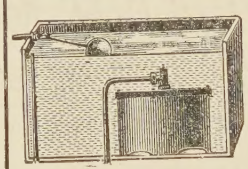

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Printed for the Proprietor by HENDERSON & SPALDING, at 3 and 5, Marylebone-lane, Oxford-street, in the Parish of Marylebone, in the County of Middlesex, and Published by ALEXANDER P. WATT, at No. 2, Paternoster-square, London, E.C.